

REMARKS

The Office Action mailed March 31, 2005 has been received and the Examiner's comments carefully reviewed. Claims 1-19 are currently pending. Applicants respectfully submit that the pending claims are in condition for allowance.

Objection to the Specification

The Examiner objected to the specification due to the omission of an application serial number on page 1, at line 9. Applicants have amended the specification to update the application serial number information. Applicants respectfully request withdrawal of this objection.

Rejections Under 35 U.S.C. §103

The Examiner rejected claims 1-19 under 35 U.S.C. §103(a) as being unpatentable over Bach et al. (U.S. Patent 6,149,716) in view of Elliott et al. (U.S. Patent 6,129,852). Applicants respectfully traverse this rejection.

A. Claims 1-8

Independent claim 1 recites a filter cleaning system for use with a filter having a front and a back, the front defining an open plenum. The system includes a nozzle configured to receive a primary fluid jet from a fluid manifold by operation of a valve, the nozzle including a diffuser that separates the primary fluid jet into multiple jets.

Bach does not teach or suggest a nozzle having a diffuser that separates the primary fluid jet into multiple jets. The Examiner relies upon Elliott for this limitation, stating that it would have been obvious to provide a nozzle as taught by Elliott in the system of Bach. Applicants respectfully submit that where Bach fails to teach or suggest the limitations of the claimed nozzle, Elliott fails to make up for the deficiencies of Bach.

In particular, Elliott teaches a cleaning filter nozzle 2 having flow control member 4 attached to a nozzle 32. The flow control member 4 includes a conical portion 6 and a cylindrical portion 8. The cylindrical portion 8 is adapted to redirect air flow after the air flow has passed over the conical portion 6.

Elliot does not teach or suggest a diffuser that separates a primary fluid jet into multiple jets. In contrast, Elliott teaches a flow control member 4 having "a cylindrical portion 8 thought to prevent the separation of air flowing over the conical portion 6 which would normally separate after it had passed the end of the conical portion 6." Column 5, lines 37-40. Elliott in fact teaches away from separating a primary fluid jet into multiple jets, as recited in claim 1. Because neither Bach nor Elliott teaches or suggests a nozzle having a diffuser that separates a primary fluid jet into multiple jets, the requirements to establish a prima facie case of obviousness have not been met.

In addition, claim 1 further recites that the system includes a blowpipe configured to position the nozzle adjacent to the front of the filter, and position the valve adjacent to the back of the filter. Applicants respectfully submit that neither Bach nor Elliott teaches or suggests this claimed limitation.

In particular, Bach teaches a filter unit 1 having a plurality of filter elements 7. The filter elements 7 are suspended in a vertical orientation, that is, the filter elements depend downwardly from a plate 6. The filter unit 1 includes an air supply line 18 interconnected to a mixing chambers 12. A control valve 44 is provided in the air supply line 18 to control air delivery to the mixing chambers 12. In use, the control valves 44 are actuated as part of a clean-in-place operation.

Bach does not teach or suggest a blow pipe that positions the mixing chamber 12 (or nozzle) adjacent to a front or top opening 7' of a filter element 7, and that positions the valve 44 adjacent to the bottom of the filter element. Rather, both the control valve 44 and the mixing chambers 12 are located adjacent the front of the filter elements 7.

At least for the above reasons, Applicants respectfully submit that independent claim 1, and dependent claims 2-8 are patentable.

B. Claim 9

Claim 9 recites a nozzle for use with a filter cleaning system. The nozzle includes a nozzle body defining a first end and a second end. The second end has multiple exhaust tubes. The nozzle also includes a diffuser arrangement located adjacent to the second end. The diffuser arrangement includes a number of wedge constructions.

Bach does not teach or suggest a nozzle having multiple exhaust tubes. Bach also does not teach or suggest a nozzle having a number of wedge constructions. Applicants respectfully submit that where Bach fails to teach or suggest the limitations of the claimed nozzle, Elliott fails to make up for the deficiencies of Bach.

First, Elliott does not teach or suggest a nozzle having multiple exhaust tubes. It is unclear to Applicants what elements in fact Elliott is characterizing as a nozzle. In order to respond to the Examiner's concerns, Applicants assume the mixing chamber 12 is the structure of which Elliott and the Examiner characterize as a nozzle. Elliott teaches that the "mixing chamber 12 is hollow and has a lower outlet 13 facing [a] venturi tube 11." Column 8, lines 32-33. The nozzle taught by Elliott includes only a single outlet 13, not multiple outlets or exhaust tubes, as recited in claim 9.

Second, Elliott does not teach or suggest a nozzle having a diffuser arrangement having a number of wedge constructions. Instead, Elliott teaches a flow control member 4 having a conical portion 6 and a cylindrical portion 8. "The conical portion 6 and cylindrical portion 8 are formed as a cup-like structure with a hollow interior 12." Column 5, lines 5-6. Elliott teaches a flow control member having a single cup-like construction, not a number of wedge constructions, as required by claim 9.

At least because neither Bach nor Elliott teaches or suggests a nozzle having multiple exhaust tubes and a diffuser arrangement having a number of wedge constructions, Applicants respectfully submit that claim 9 is patentable.

C. Claim 10

Claim 10 recites an arrangement for use with a filter cleaning system. The arrangement includes a valve mounted to a manifold. The valve has a valve body and first and second seals. The first seal provides sealing contact between the valve body and a first outer surface of the manifold, and the second seal provides sealing contact between the valve body and the interior of the manifold. The valve also includes openings formed in the valve body and located within the interior of the manifold, and a diaphragm that controls fluid communication through the valve.

Neither Bach nor Elliott teaches or suggests an arrangement as recited in claim 10. Bach teaches use of control valves 44, but is silent as to the particular components of,

and relationship between, the control valve 44 and air supply line 18. Elliott simply does not teach or suggest a valve and manifold arrangement.

At least for these reasons, Applicants respectfully submit that claim 10 is patentable.

D. Claims 11-18

Claim 11 recites a valve having a valve body, a mounting flange interconnected to the valve body, and a plurality of openings formed between the mounting flange and the valve body. Openings between the valve body and flange are in fluid communication with a fluid passage defined by the valve body. The valve also includes a diaphragm that controls the fluid communication through the fluid passage of the valve body.

Neither Bach nor Elliott teaches or suggests a valve as recited in claim 10. Bach teaches use of control valves 44, but is silent as to the particular components of the control valve 44. Elliott simply does not teach or suggest a valve. At least for these reasons, Applicants respectfully submit that claims 11-18 are patentable.

E. Claim 19

Claim 19 recites a method of servicing a filter cleaning system for a gas turbine air intake system. The gas turbine air intake system includes a frame with an apertured tube sheet and a plurality of filter elements mounted adjacent to apertures in the tube sheet. The gas turbine air intake system cleans gas by drawing gas through an upstream side of the filter elements, through the filter elements, and through apertures in the tube sheet. The tube sheet has an upstream side (corresponding to the exposed upstream sides of the filter element), and a downstream side. The method includes accessing the filter cleaning system from the upstream side of the tube sheet, the filter cleaning system including manifold and pulse valve arrangements.

Applicants respectfully submit that, first, Bach does not teach or suggest a method of servicing a filter cleaning system for a gas turbine air intake system. Bach relates to a filter unit for separating dust-like products, such as food-stuffs, pharmaceuticals, and dyestuffs, for example. Bach does not teach or suggest that the filter unit can be incorporated into a system for a gas turbine air intake system.

Nonetheless, Bach teaches a filter housing having an upper section 2 and a lower section 3. "A horizontal plate 6 dividing the housing in an upper outlet side 8 and a lower inlet side 9 is arranged in the upper part of the cylindrical section 2 below outlet 5. The plate 6 has a number of holes, in which elongated tubular filter elements 7 are suspended approximately vertically with their openings 7' opening upward to the outlet side 8." Column 7, lines 53-59. The air supply line 18 and the control valves 44 of the filter unit 1 are located adjacent the openings 7' of the filter elements 7 in the upper section 2 of the filter housing.

Bach does not teach or suggest accessing the filter cleaning system from an upstream side of a tube sheet. Instead, the air supply line 18 and the valves 44 are located above the plate 6, and therefore are accessed from a downstream side of the plate 6, not the upstream side of the plate, as required by claim 19.

Elliott is silent as to a method of servicing a filter cleaning system for a gas turbine air intake system, and therefore does not make up for the deficiencies of Bach. At least for these reasons, Applicants respectfully submit that claim 19 is patentable.

SUMMARY

It is respectfully submitted that each of the presently pending claims (claims 1-19) is in condition for allowance and notification to that effect is requested. The Examiner is invited to contact Applicants' representative at the below-listed telephone number if it is believed that prosecution of this application may be assisted thereby.

Although certain arguments regarding patentability are set forth herein, there may be other arguments and reasons why the claimed invention is patentably distinct. Applicants reserve the right to raise these arguments in the future.



Date: June 28, 2005

Respectfully submitted,

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A handwritten signature in dark ink, appearing to read 'Karen A. Fitzsimmons'. The signature is fluid and cursive, with a long horizontal stroke extending to the right.

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